

Ground Water Protection School WWTP Removes Total Nitrogen

The Dover & Sherborn, MA Wastewater Treatment Plant

Twenty miles west of Boston the rural towns of Dover and Sherborn, Massachusetts share a regional middle and high school facility. Both towns rely entirely on individual septic systems for their wastewater infrastructure. When the school decided to expand in 1999 the Massachusetts Department of Environmental Protection (MADEP) required that the school district install a wastewater treatment facility to comply with the state's Groundwater Discharge (GWD) pollution control regulations. Under this guideline, any facility generating greater than 10,000 gallons per day (gpd) without access to an existing municipal sewer system must treat its wastewater to remove total nitrogen.

School waste streams can represent challenging conditions for biological treatment processes. Given school sanitary routines, the potential for toxic shock loading and peak hydraulic loading is high. Furthermore, ammonia nitrogen concentrations in the influent are typically 4-5 times that of typical domestic wastewater. The schools engineer selected an AquaPoint Bioclere^{OH} treatment system for its proven nitrification and denitrification performance capability, energy efficiency and low life cycle costs. The plant is designed for a maximum daily flow rate of 15,260 gpd.



DESIGN CHARACTERISTICS

	INFLUENT	EFFLUENT
DESIGN FLOW (GPD)	15,260	15,260
DESIGN TEMP (C)	10	-
BOD ₅ (mg/l)	500	< 30
TSS (mg/l)	350	< 30
TKN (mg/l)	160	-
AMMONIA-N (mg/l)	130	< 3
NITRATE-N (mg/l)	-	< 5
TOTAL-N (mg/l)	-	< 10

39 Tarkiln Place
New Bedford, MA 02745
T (508) 985-9050 | F (508) 985-9072

AQUAPOINT.COM

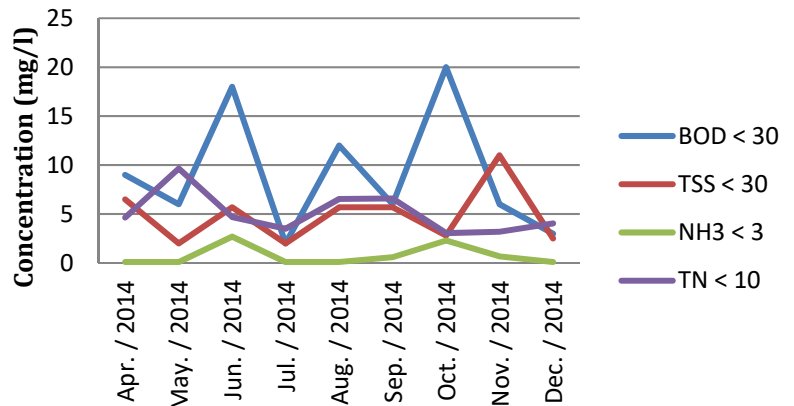


System Layout & Performance

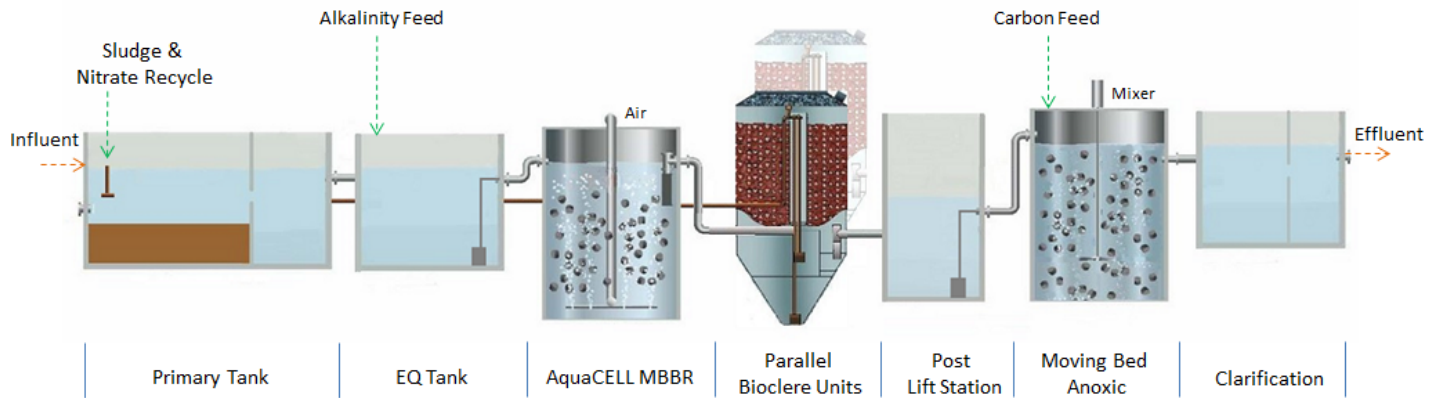
Dover & Sherborn, MA – Regional School System WWTP

DATE	BOD ₅ (mg/l)	TSS (mg/l)	NH ₃ (mg/l)	TN (mg/l)
Apr. / 2014	9	6.5	0.1	4.65
May. / 2014	6	2	0.1	9.65
Jun. / 2014	18	5.7	2.7	4.7
Jul. / 2014	2	2	0.1	3.5
Aug. / 2014	12	5.7	0.1	6.55
Sep. / 2014	6	5.7	0.6	6.6
Oct. / 2014	20	2.8	2.3	3.05
Nov. / 2014	6	11	0.67	3.2
Dec. / 2014	3	2.5	0.1	4.05
AVG.	9.1	4.9	0.8	5.1

Dover Sherborn School Performance Data



System commissioned 1999
 Detectable limit for BOD & TSS = 2 mg/l
 Data from MA DEP Records



AQUAPOINT
 Advanced Wastewater Treatment Systems & Services

39 Tarkiln Place
 New Bedford, MA 02745
 T (508) 985-9050 | F (508) 985-9072
www.aquapoint.com

